CLAIMS

What is claimed is:

1.   A material control system (MCS) to select an optimum transport route by calculating a prospective transport time between a source node and a destination node, comprising:

a transport order manager to receive and manage layout information, and real-time job information of a load and a waiting job number of a storehouse according to respective unit links;

an optimum route generating part to calculate the prospective transport time by receiving the layout information and the real-time job information in a predetermined period of time from the transport order manager and by modeling the information, and to select a transport route having a minimum prospective transport time as the optimum transport route.

2.   The material control system according to claim 1, wherein the real-time job information of the transport order manager comprises information on transport vehicle traffic.

3.   The material control system according to claim 1, wherein the real-time job information of the transport order manager comprises information on errors of transport vehicles in production lines.

4.   The material control system according to claim 2, wherein the real-time job information of the transport order manager comprises information on errors of transport vehicles in production lines.

5.   The material control system according to claim 1, wherein the prospective transport time is increased if the load and the waiting job number of the storehouse are increased, and the prospective transport time is decreased if the load and the waiting job number of the storehouse are decreased.

6.   The material control system according to claim 2, wherein the prospective transport time is increased if the traffic of the transport vehicle is increased, and the prospective transport time is decreased if the traffic of the transport vehicle is decreased.

7.   The material control system according to claim 1, further comprising:

a transport order executing part to receive a transport order from the transport order manager, to request the optimum route generating part for a route search, and to transmit a result of the route search to the transport order manager so that the material control system is executed.

8.   The material control system according to claim 7, further comprising:

a product managing system to receive the transport order and transmit the transport order to the transport order manager.

9.   The material control system according to claim 7, wherein the optimum route generating part performs the route search upon request from the transport order executing part and updates the route search by periodically receiving real-time information from the transport order manager.

10.   The material control system according to claim 1, wherein the real layout information comprises information on transport orders, transport equipment condition, and transport vehicles.

11.   The material control system according to claim 1, wherein the prospective transport time is calculated based on distance between the respective unit links, speed of a transport vehicle in a traveled region of the respective unit links, and vehicle transport traffic.

12.   A method of controlling a material control system to select an optimum transport route between a source node and a destination node, the method comprising:

receiving and managing real layout information and real-time job information of a load and a waiting job number of a storehouse according to respective links;

creating a data structure based on the real layout information and the real-time job information, and updating the data structure by receiving the real layout information and the real-time job information periodically;

creating a route search structure based on a route search demand;

calculating a prospective transport time according to the respective links within the route search structure; and

selecting a transport route having a minimum prospective transport time of the respective links within the route search structure to reach the destination node from the source node, as the optimum transport route.

13. The method according to claim 12, wherein the real-time job information comprises information on transport vehicle traffic.

14. The method according to claim 12, wherein the prospective transport time is increased if the load and the waiting job number of the storehouse are increased, and the prospective transport time is decreased if the load and the waiting job number of the storehouse are decreased.

15. The method according to claim 13, wherein the prospective transport time is increased if the traffic of the transport vehicle is increased, and the prospective transport time is decreased if the traffic of the transport vehicle is decreased.